

TG 01770 v07.02
Summary of Changes:

- **Reasons For Change:**

While Oahu uses electronic submission of O&M manuals with a single hardcopy, the District Offices finds that hard copy of these manuals are very useful for their clients. The additional hardcopy O&M submission requirements had been inserted for the benefit of their clients.

See Markup below:

1.06 WARRANTIES

- A. Submittal Time: Submit written manufacturer's warranties at request of the Contracting Officer for designated portions of the Work where commencement of warranties other than Project Acceptance date is indicated.
- B. Partial Occupancy: Submit properly executed manufacturer's warranties within 45 days of completion of designated portions of the Work that are completed and occupied or used by the State during construction period by separate agreement with Contractor.
- C. Organize manufacturer's warranty documents into an orderly sequence based on the table of contents of the Specifications.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 inch x 11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer and prime contractor.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES", Project Name and Title, DAGS Job Number, and name of Contractor.
 - 4. Use the final submittal of the warranties to create an electronic Adobe Acrobat PDF (Portable Document Format) version of the bound warranty documents files. Each sheet shall be separately scanned, at 600 DPI or better into a PDF file, indexed and recorded on a recordable compact disc (CD).

SPECIFIER'S NOTE: Require 2 sets warranties be submitted as part of standard closing documents. Confirm with Project Coordinator if additional sets or other information is required.

- D. Provide [2] sets of manufacturer's warranties that exceed one year and one CD as part of the closing document submittals. Provide additional copies of each warranty to include in operation and maintenance manuals.

SPECIFIER'S NOTE: ~~As standard, Oahu projects require 2 Pre-Final sets printed, 1 Final set printed and 6 Final CDs of the Operation and Maintenance manuals (Owner -1, plan or jobsite -1, maintenance -2 and contractor -2) and, Kauai, Maui and Hawaii DAGS District Offices require 2 Pre-Final sets printed, 6 Final set printed and 6 Final CDs of the Operation and Maintenance manuals (Owner -1, plan or jobsite -1, maintenance -2 and contractor -2) be submitted. Modify the quantity ifas neededrequired for project location.~~

1.07 OPERATION AND MAINTENANCE MANUALS

- A. Assemble complete sets of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
1. Operation Data:
 - a. Emergency instructions and procedures.
 - b. System, subsystem, and equipment descriptions, including operating standards.
 - c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
 - d. Description of controls and sequence of operations.
 - e. Piping diagrams.
 2. Maintenance Data:
 - a. Manufacturer's information, Material Safety Data Sheets, and a list of spare parts.
 - b. Name, address, and telephone number of installer or supplier.
 - c. Maintenance procedures.
 - d. Maintenance and service schedules for preventive and routine maintenance.
 - e. Maintenance record forms.
 - f. Sources of spare parts and maintenance materials.
 - g. Copies of maintenance service agreements.
 - h. Copies of warranties and bonds.
- B. Use the following 3 paragraph headings, "Notes, Cautions and Warnings", to emphasize important and critical instructions and procedures. Place the words "Notes", "Cautions", or "Warnings" immediately before the applicable instructions or procedures. Notes, Cautions and Warnings are defined as follows:
1. Note: highlights an essential operating or maintenance procedure, condition or statement.
 2. Caution: highlights an operating or maintenance procedure, practice, condition or statement which if not strictly observed, could result in damage to or destruction of equipment, loss of designed effectiveness, or health hazards to personnel.
 3. Warning: highlights an operating or maintenance procedure, practice, condition, or statement that if not strictly observed, could result in injury to or death of personnel.
- C. Organize the Operation and Maintenance Manuals into suitable sets of manageable size. Bind and index data in heavy-duty, "D" type 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Binder color shall be maroon, or if not available red. Identify each binder on front and

spine with the printed title "OPERATION AND MAINTENANCE MANUAL", Project Name and Title include building number when appropriate, DAGS Job Number, Prepared For: **[User Agency]**, Prepared By: [Contractor] and Volume Number. Each binder is a single volume.

D. Electronic Format

1. Provide all information (narratives, drawings and manual) on a Compact Disc (CD). Provide drawings and plans prepared for the O&M Manuals drawn electronically and saved as a PDF file. Name and index the files for ease of identification and updates.
2. Provide the complete O&M Manual using Adobe Acrobat PDF (Portable Document Format) files. Each sheet shall be separately scanned into a PDF file, indexed, bookmarked, hyperlinked to the table of contents and recorded on a compact disc (CD). Scanned documents shall be scanned at 600 DPI or better. Indexes and bookmarks may be highlighted or colored text. The final submittal shall include written instructions for installing, accessing and retrieving information from the compact disc.

E. Pre-Final Submittal: Submit 2 **printed** sets of Pre-Final Operation and Maintenance Manuals, for review by the Contracting Officer, at least 5 days prior to scheduled final inspection. Manuals shall be marked as Pre-Final. Make any correction noted before submitting the final Operation and Maintenance Manuals.

1. The user and the Department will each keep one copy of the Pre-Final submittal to operate and maintain the facility from the Project Acceptance Date through submission of the final submittal. Therefore, the submittal shall contain all the required information that is available at the time of submission.
2. One set will be returned with comments. Additional review comments may include problems discovered during the O&M Manual's review, site validation, and facility start up and will be provided to the Contractor after facility Project Acceptance Date.

SPECIFIER'S NOTE: Select 6 copies of the printed Final Sets for Kauai, Maui and Hawaii District Offices or 1 copy for Oahu. Unless the Project requires a different quantity, use 6 CD sets as standard.

- F. Final Submittal: Use the final submittal of the manuals to create the electronic PDF file version of the bound Operation and Maintenance Manuals documents. Include the Submittal (100 percent) review comments along with a response to each item. Provide **[1] [6]** Final sets of the printed manuals and 6 Final compact discs, (CDs) as part of the closing document submittal. Final printed manual and disks shall be marked as Final.